Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application. All claims currently being amended are shown with deleted text struckthrough or double bracketed and new text underlined. Additionally, the status of each claim is indicated in parenthetical expression following the claim number.

Claims 1-19 remain.

Claims 1, 10, and 15 are being amended.

WHAT IS CLAIMED IS:

1. (Currently Amended) A multi-channel digital audio decoder for receiving an encoded audio signal having at least two channels and for decoding the encoded audio signal, the digital audio decoder comprising:

(a) an input which receives the encoded audio signal;

(b) a processor which receives the encoded audio signal from the input decodes at the least two channels of the encoded audio signal, and provides at least two channels of decoded digital audio data; and

(c) a buffer which receives the at least two channels of decoded digital audio data from the processor, the buffer having at least a first-channel portion and a second-channel portion wherein the first-channel portion is defined to have a size which is not equal to the size of the second-channel portion, and wherein a difference in size between the first-channel portion and the second channel-portion is proportional to a decode time of a selected one of the two channels of the encoded audio data.

2. (Original) The digital audio decoder of claim 1 wherein the decoded digital audio data is playable PCM data.

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3. (Original)   The digital audio decoder of claim 1 wherein the processor is further operable to perform post-processing on the decoded digital audio data before passing the data on to the buffer.

4. (Original)   The digital audio decoder of claim 1 wherein the first-channel portion of the buffer stores the first-channel data of the decoded digital audio data which was decoded by the processor from the earlier arriving channel of the at least two channels of the encoded audio signal and the second-channel portion of the buffer stores the second-channel data of the decoded digital audio data which was decoded by the processor from the later arriving channel of the at least two channels of the encoded audio signal.

5. (Original)   The digital audio decoder of claim 4 wherein the first-channel portion of the buffer has a larger storage capacity than does the second-channel portion.

6. (Original)   The digital audio decoder of claim 1 wherein the encoded audio signal is an AAC-encoded signal.

7. (Original)   The digital audio decoder of claim 1 wherein the encoded audio signal comprises six channels and wherein the processor decodes the six channels and wherein the buffer receives the six channels of decoded digital audio data and stores it in six portions of the buffer, the six portions including the unequally sized first-channel and second-channel portions.

8. (Original)   The audio decoder of claim 7 wherein the six portions of the buffer are arranged in order of generally decreasing size according to the order of arrival of the respective channels in the encoded audio signal.

9. (Original)   The audio decoder of claim 8 wherein the first-channel portion of the buffer receives a decoded Center channel signal from the processor, the second-

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channel portion of the buffer receives a decoded Left channel signal, the third-channel portion of the buffer receives a Right channel signal, the fourth-channel portion of the buffer receives a Right Surround channel signal, the fifth-channel portion of the buffer receives a Left Surround channel signal, and the sixth-channel portion of the buffer receives a Low Frequency Effect channel signal.

10. (Currently Amended) A multi-channel audio decoder for receiving an encoded audio signal having at least six channels and decoding the encoded audio signal, the audio decoder comprising;

(a)   an input that receives the encoded audio signal;

(b)   a processor which receives the encoded signal from the input and decodes the at least six channels of the encoded audio signal and provides at least six channels of decoded digital audio data; and

(c)   a buffer which receives the at least six channels of decoded audio data from the processor, said buffer having at least a first-, a second-, a third-, a fourth-, a fifth-, and a sixth-channel portion, wherein at least two portions of the first through sixth-channel portions are defined to have differing sizes proportional to decode times of at least two of the six channels of the encoded audio signal.

11. (Original)   The audio decoder of claim 10 wherein the first- through sixth-channel portions store decoded audio data corresponding to the first- through sixth-arriving channels of the encoded audio signal.

12. (Original)   The audio decoder of claim 11 wherein the six portions of the buffer generally decrease in size from the first- to the sixth-channel portions.

13. (Original)   The audio decoder of claim 12 wherein at least two of the portions are of equal sizes.

14. (Original)   The audio decoder of claim 12 wherein at least one portion has a size greater than at least one of the other portion having a lower channel number than the at least one portion.

15. (Currently Amended)   A method for decoding an encoded digital audio signal having at least two channels, the method comprising:

(a)   providing a buffer having at least a first-channel portion and a second-channel portion, the first-channel portion defined to have more storage locations than the second channel portion, a number of storage locations in the second-channel portion proportional to a decode time of one of the at least two channels of the encoded audio signal, the portions of the buffer further being defined to have circular addressing whereby once the end addresses of the respective portions are reached, the addressing of those portions continues, when incremented, at their beginning addresses;

(b)   receiving the encoded digital audio signal, the first-channel of the encoded digital audio signal arriving before the second channel;

(c)   decoding the encoded audio signal and providing a first block of decoded first-channel audio data and a first block of decoded second-channel audio data;

(d)   storing the first block of decoded first-channel audio data in the first-channel portion of the buffer and the first block of decoded second-channel audio data in the second-channel portion of the buffer;

(e)   retrieving playable decoded audio data from the first blocks of data stored in the first- and second-channel portions of the buffer, thereby simultaneously emptying the playable decoded audio data from the beginning addresses of the first- and second-channel portions of the buffer;

(f)   continuing to decode the encoded audio signal to provide a second block of decoded first-channel audio data;

(g)   storing the second block of decoded first-channel audio data in the first-channel

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portion of the buffer and beginning at an address following the last storage location used by the first block of decoded first-channel audio data;

(h)   continuing to retrieve playable decoded audio data stored in the first- and second-channel portions of the buffer during the decoding and storing of the second block of first-channel data, thereby continuing to simultaneously empty the playable decoded audio data from addresses increased from their previous beginning addresses;

(i)   continuing to decode the encoded audio data to provide a second block of decoded second-channel audio data;

(j)   storing the second block of decoded second-channel audio data in the second-channel portion of the buffer and beginning at an address following the last storage location used by the first block of decoded second-channel audio data, the storing of the second block of decoded second-channel audio data wrapping around to the beginning address of the second-channel portion from a lower end address than was done when storing first-channel audio data in the first portion.

16. (Original)   The method of claim, 15 wherein the decoded digital audio data is playable PCM data.

17. (Original)   The method of claim 15 wherein the encoded audio signal is an AAC-encoded signal

18. (Original)   The method of claim 15 wherein the encoded audio signal comprises six channels and wherein the buffer is provided having first- through sixth-channel portions of generally decreasing size from the first- to the sixth-channel portions.

19. (Original)   The method of claim 18 when at least one relatively lower-numbered channel portions has a size greater than another, relatively higher-numbered channel portion.